

The American FERTILIZER



• •
AMMONIUM NITRATE

•
SULPHATE of AMMONIA

•
ORGANIC AMMONIATES

•
SULPHUR
• •



*Foreign
and
Domestic*

**VEGETABLE OIL MEALS
AND
FEEDSTUFFS**

Exclusive Distributors Duval Texas Sulphur

ASHCRAFT-WILKINSON CO.

Branches
NORFOLK, VA.
CHARLESTON, S. C.
JACKSON, MISS.
TAMPA, FLA.

Home Office
ATLANTA, GEORGIA

Cable Address
ASHCRAFT

Subsidiaries
INTERSTATE MILLS, INC.
CAIRO, ILL.
INTERSTATE WAREHOUSE
MOUNDS, ILL.

IT'S IN THE
BAG

JAITE
HEAVY DUTY
MULTI-WALL
PAPER BAGS
*Offer Dependable
Protection for*
YOUR
FERTILIZERS

- THE RIGHT BAG -
IS A JAITE HEAVY
DUTY MULTI-WALL
PAPER BAG

*Jaite Bags are made of Super-
Quality "Multi-Wall" Kraft Paper
including Moist-Proof Sheets
when necessary. In sewn or
Pasted Types.*

The JAITE COMPANY

MANUFACTURERS OF PAPER AND PAPER BAGS

JAITE, OHIO.

SINCE 1905

A Complete Service

THE strategic factory locations of The American Agricultural Chemical Company, as shown on the accompanying map, assure prompt, dependable service for the complete line of products listed below.

We manufacture all grades of Commercial Fertilizers, Superphosphate, Agrinite Tankage, Bone Black, Bone Black Pigments (Cosmic Black), Bone Ash, Bone Oil, Dicalcium Phosphate, Monocalcium Phosphate, Gelatin, Agricultural Insecticides (including Pyrox, Arsenate of Lead, Calcium Arsenate, etc.), Trisodium and Disodium Phosphate, Phosphorus, Phosphoric Acid, Sulphuric Acid, Ammonium Carbonate, Ammonium Fluosilicate, Magnesium Fluosilicate, Potassium Fluosilicate, Phosphorus Pentasulphide, Phosphorus Sesquisulphide (lump), Zinc Fluosilicate, Salt Cake; and we are importers and/or dealers in Nitrate of Soda, Cyanamid, Potash Salts, Sulphate of Ammonia, Raw Bone Meal, Steamed Bone Meal, Sheep and Goat Manure, Fish and Blood. We mine and sell all grades of Florida Pebble Phosphate Rock.



FACTORIES

Alexandria, Va.	Cleveland, Ohio	No. Weymouth, Mass.
Baltimore, Md.	Detroit, Mich.	Pensacola, Fla.
Buffalo, N. Y.	Greensboro, N. C.	Pierce, Fla.
Cartaret, N. J.	Havana, Cuba	Port Hope, Ont., Can.
Cayce, S. C.	Henderson, N. C.	Savannah, Ga.
Chambly Canton,	Montgomery, Ala.	Searsport, Maine
Quebec, Can.	Nat. Stockyards, Ill.	South Amboy, N. J.
Charleston, S. C.	Norfolk, Va.	Spartanburg, S. C.
Cincinnati, Ohio		Wilmington, N. C.

The AMERICAN AGRICULTURAL CHEMICAL Co.

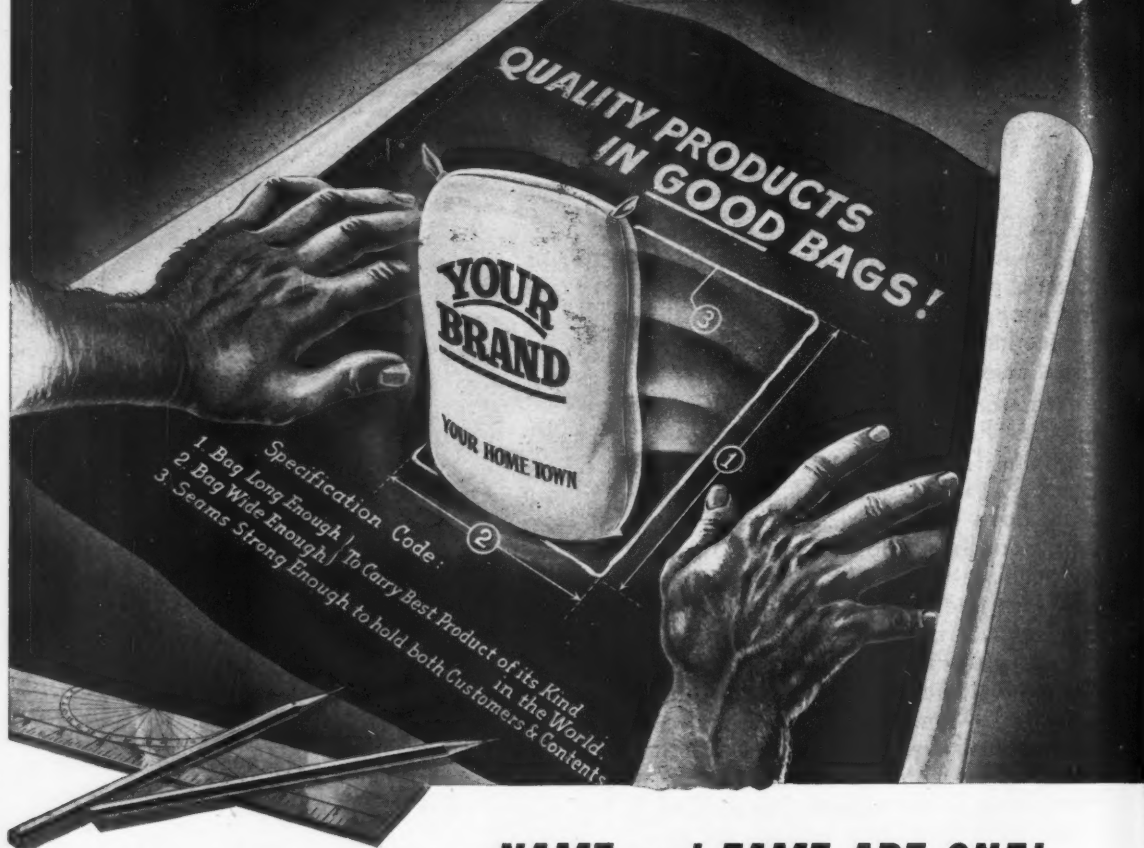
50 Church Street, New York 7, N. Y.

SALES OFFICES

Alexandria, Va.	Columbia, S. C.	Montgomery, Ala.	Pierce, Fla.
Baltimore, Md.	Detroit, Mich.	Montreal, Quebec, Can.	Port Hope, Ont., Can.
Buffalo, N. Y.	Greensboro, N. C.	National Stockyards, Ill.	Savannah, Ga.
Cartaret, N. J.	Havana, Cuba	New York, N. Y.	Spartanburg, S. C.
Charleston, S. C.	Henderson, N. C.	Norfolk, Va.	Wilmington, N. C.
Cincinnati, Ohio	Houlton, Me.	No. Weymouth, Mass.	
Cleveland, Ohio	Laurel, Miss.	Pensacola, Fla.	



Blue print for repeat sales!



NAME and FAME ARE ONE!

When your brand is printed proudly on a good burlap or cotton bag, it is read and remembered. *Textile Bags stay around longer!*

Use only good bags and cash in on point-of-sale *and* point-of-use advertising! MENTE MAKES MILLIONS OF FERTILIZER BAGS. If it's bags you want to buy—write or phone MENTE!

It's Better to Buy Bonds
Than it would have been to wear them!

MENTE & CO., INC.

NEW ORLEANS

HOUSTON

I. T. Rhea, President and General Manager

SAVANNAH

print your

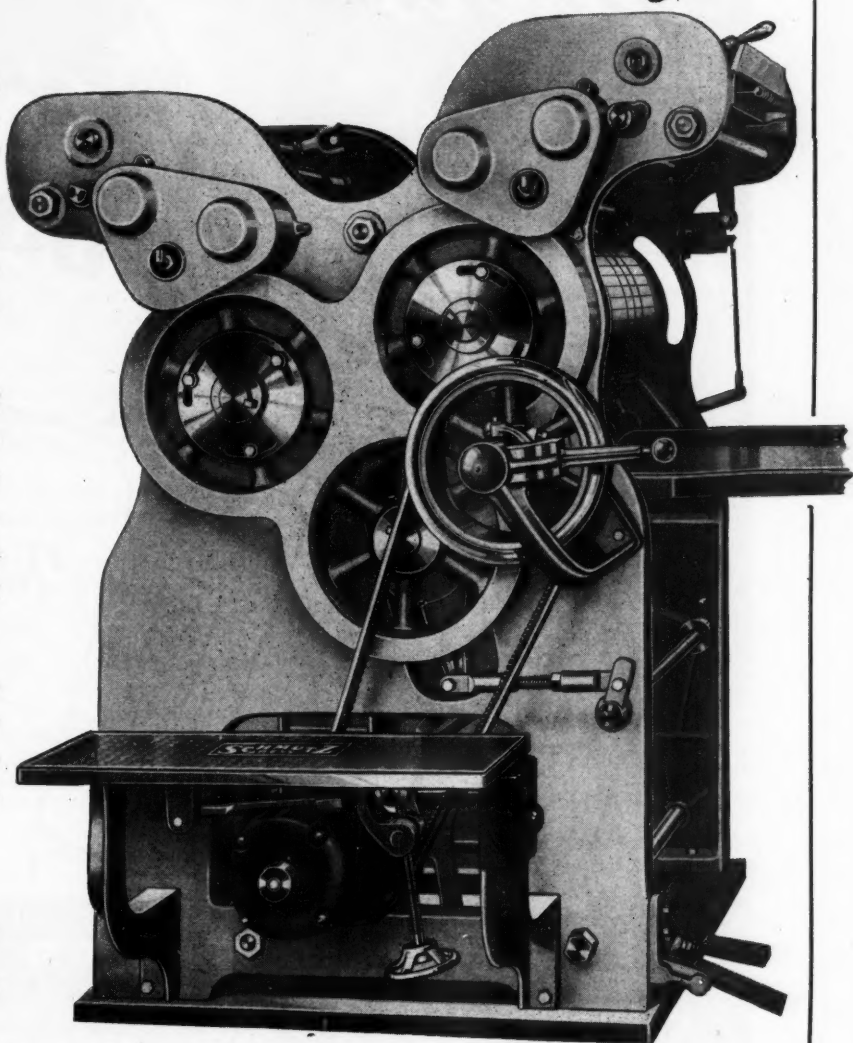
FERTILIZER BAGS

*more
attractively*

This new 1945 Model Bag Printer will print any size or type of bag made of paper, burlap, cotton or paper-lined material. It is built in one, two and three colors.

The highest type of printing can be done with this machine at the lowest possible cost. It will also do an excellent job of printing on used bags.

We are in a position to make prompt delivery on printing plates also printing inks for the Fertilizer industry.



SCHMUTZ
MFG. CO.
INCORPORATED

18th and Main Streets
Zone 3

Louisville, Ky.

MANUFACTURED IN TWO AND THREE COLORS

CABLE ADDRESS "SCHMUTZ" ♦ LONG DISTANCE PHONE JACKSON 5219

*76
Years*

MAKING GOOD BAGS
FOR THE PRODUCTS
OF THE NATION



Fulton Quality Bags



Fulton Bag & Cotton Mills

Manufacturers Since 1870

ATLANTA
NEW YORK

ST. LOUIS
NEW ORLEANS

DALLAS
DENVER

MINNEAPOLIS
KANSAS CITY, KANSAS

The American FERTILIZER

Vol. 105

AUGUST 10, 1946

No. 3

Meeting Our Plant Food Needs*

By W. A. MINOR

Assistant to the U. S. Secretary of Agriculture

FERTILIZER has been important to farmers for a very long time. Today it is a matter of concern to everyone. Fertilizer has an important place in the international program to relieve the world food shortage. It will have an important part in the long-time development of an increasingly sound, permanent system of American agriculture.

Unlike many industries that played an important part in the nation's war program, the fertilizer industry is not faced with a reconversion problem of the necessity of cutting back. You face a production challenge which is just as great and just as urgent as any that you faced during the war.

Your performance during the war indicates that you are equal to almost any task. Your increases in production were phenomenal. They permitted great increases in consumption of fertilizer on the farms. Use of nitrogen increased from a pre-war average of 371,000 tons to a total of 640,000 in 1945. Consumption of P_2O_5 went from 720,000 tons to 1,368,000. Use of K_2O increased from 375,000 tons to 746,000.

You did all this in the face of undoubtedly the greatest difficulties you had ever encountered. Looking back, you probably wonder how you ever did it. I am sure I don't know, but the point is you did it, and you earned the sincere compliments and regard of the nation.

Your achievement had no small part in enabling farmers to increase their efficiency in the midst of war; to increase their production for human use approximately one-third; to make our armed forces the best-fed fighters any nation ever had; to help maintain the strength of our allies; and to enable the civilians of the United States to improve their own diets.

The nation could not have achieved so much so quickly had fertilizer not been available in great amounts. Therefore, it is no exaggeration to say that fertilizer—before the war considered merely a prosaic item in the farm business—went into the dramatic business of saving lives. It is still in the life-saving business and will be as long as the world food emergency continues. As long as people are dying or in danger of dying from starvation—as long as hundreds of millions of people in the world feel the pangs of preventable hunger—the world shortage of plant food materials will be a problem of extreme urgency.

The current shortage of plant food material is not only a threat to human life; it is a threat to humanity in general. A firm foundation of peace cannot be built upon the sands of starvation. Meeting the hunger problem does not guarantee the building of permanent peace; but it is equally true that you cannot build the peace without meeting the hunger problem.

We know the world food shortage will continue for at least another year. We don't know how much longer. The length of time

*An address at the meeting of the American Plant Food Council, Hot Springs, Va., June 24, 1946.

will depend in part on the time it takes to meet the plant food shortage. At the present time the United Nations Food and Agriculture Organization estimates that the world is approximately 30 per cent short of nitrogen and phosphates. Supplies of potash currently moving in world commerce are far short of requirements. In terms of tonnages, the world is probably short of nitrogen to the extent of nearly 900,000 tons. The world would use more phosphates than it can get; there's a need for probably three and a third million tons more phosphate rock than is being produced. There might be enough potash if Germany exported as much as being produced. There might be enough potash if Germany exported as much as 600,000 tons. The measure of the shortage will be the difference between that figure and the actual German exports.

Reasons for World Fertilizer Shortage

As you know, there are many reasons for the world shortage of fertilizer. There is no point in my discussing them extensively, but I would like to mention a few. Demand has increased in the United States, the United Kingdom and Canada, and production hasn't kept up with that demand. Japan, which used to supply its own needs, and Germany, which was formerly the world's largest exporter of nitrogen and potash, cannot now supply their own minimum requirements of fertilizers.

Many countries are now feeling the cumulative effect of six years when they had little or no commercial fertilizer and when their farm manure was reduced in both quantity and quality. There is a very acute shortage of fertilizer in China, Formosa, India and Java. Shortages are severe in Egypt; in Spain, Portugal, and Eire; in northwest Europe; in Italy and the Balkans; and in Korea, as well as in Germany and Japan.

In the face of this situation, it would not make good sense for the United States to use only 50 to 60 per cent of its nitrogen-producing capacity and continue as a heavy net importer of nitrogen. By producing more nitrogen we can actually save lives. It has been reliably estimated that for every additional 50,000 tons of nitrogen supplied to the right countries at the right time producers could increase the world's wheat and rice production by about a million tons. And a million tons of food means a great deal; for comparison, remember that the United States can export less than 7,000,000 tons of wheat from the new crop. From this it is clear that

use of all of the nitrogen-producing capacity we have not been using would go a long way toward relieving the distress of the world's people.

Moreover, when we supply fertilizer we help the war-torn countries get back on their own feet as far as production is concerned, and shorten the time when we must carry the responsibility for providing food directly. We thereby shorten the time when we must continue the present excessive drain on our own soil resources. We have a big job of soil conservation ahead of us in this country—soil maintenance and soil fertility restoration. And the longer we have to export large quantities of grain for relief feeding, the longer will we have to defer establishment of a permanent farming system based on good land use.

When we get to the point where we can devote full attention to the needs of the soil—that is to say, when we have worked our way out of the world food emergency—we will be ready to concentrate on the second phase of the fertilizer problem.

Even though we greatly increased our use of fertilizer during the war, we continued to regard plant food materials in much the same way as we had always done in the past. We have always used fertilizers mainly to increase the production of particular crops, but we have begun to realize that fertilizer and lime have an even broader importance to the future of agriculture. Fertilizers and lime, where they are needed and adapted, will help farmers establish more nearly permanent systems of farming that will provide for conservation of soil and water resources and balanced agricultural output.

Much Still to Be Learned

We don't yet know as much as we need to know about the use of plant food materials for this general purpose. Dr. Salter will tell you tomorrow about many of the things we need to learn through research and testing. But we do know that even though we are using far more lime and fertilizer than ever before, we are not using nearly enough to maintain, restore, and improve the soil. We have never developed farming systems for the nation as a whole that would replace soil fertility as fast as we used it. That situation should and must be corrected.

We have much to learn about the relation between the use of plant food materials on the soil and the nutritional value of the products grown on the land. But we do know there is a definite connection, and as we increase our

knowledge of nutrition and gradually develop our food buying habits on the basis of that knowledge—which we are doing more and more—greater emphasis undoubtedly will be placed on the use of plant food materials.

The speed of our advance toward the development of better balanced farming systems and toward applying nutrition knowledge to farm production practices will depend of course upon many factors—upon economic conditions, upon educational programs, and upon the public support of the national soil conservation program.

We have already made a great deal of progress through the conservation materials part of the agricultural conservation program. Thousands of farmers who had never used lime and fertilizer for soil building purposes have had excellent demonstrations of the value of these practices. Many who had never had any luck with grasses and legumes learned it wasn't luck they needed. It was lime and fertilizer. Many farmers who had given up the idea of using good crop rotations and growing cover crops and turning under green manure, suddenly found that these practices were not only practical but profitable.

Smaller Government Fertilizer Distribution

While there may have been differences of opinion about distribution methods in the conservation materials program, I am sure there is widespread agreement that it has stimulated desirable increases in the use of fertilizer. Further, it has pointed the way toward a new attitude—a new realization that the use of plant food materials contributes greatly to the establishment of better land use.

In regard to the distribution methods, I should like to point out that, while farmers have been using more and more fertilizer under the program, direct distribution by the Government has been a smaller and smaller part of the total. Farmers have been getting increasingly large amounts through regular trade channels, either buying direct or using Government purchase orders. The Department is following a definite policy of switching from contract purchases to the purchase order plan wherever it can make suitable arrangements, and we hope that we can eventually get away from contract purchases altogether.

Aside from the conservation materials program, there are other important factors that will tend to regulate our use of plant food materials for the long-term benefit of agriculture. One great influence will be farm markets. With good markets for farm

products and an opportunity for profitable operations farmers will find it to their advantage to continue increasing their use of fertilizer and lime for some time to come.

Research and educational programs are essential. Farmers are already spending about half a billion dollars a year for fertilizer and lime and they will maintain and increase that expenditure only if they can get good results. They need to know more exactly what types of soil will respond to what treatment. They need to know more exactly what concentrations of each element to use, more exactly where to place it in or on the soil, how best to fit its use into a sound farming system—in short, how they can spend their money for maximum results.

Farmers Want More Fertilizer

Many farmers who are in the habit of using fertilizer still do not see the full potentialities of using it to improve the soil. This calls for further demonstration and education. We must also realize that many farmers who have never used fertilizer at all live in areas that are known to be responsive to the application of certain materials. Many of those farmers have had to overcome a great resistance toward the use of fertilizer. For example, a few years ago a good many corn belt farmers told me they would just quit farming if they had to use fertilizer. Now some of those same fellows are burning up the telegraph lines trying to get the Government to help them get more fertilizer.

Of course, for every farmer who has discovered that he needs fertilizer there are several others who have not reached that conclusion, and both groups need a lot of education in the effective and economical use of plant food materials. It would be particularly helpful if we could have more demonstrations of how the use of fertilizer can fit into plans for the entire farm. It is important, I believe, that fertilizer demonstrations be a part of regular extension work, the overall programs in soil conservation districts, and the activities of all agencies that deal with the use of land. From the farmer's standpoint, it is not difficult to demonstrate the use and value of fertilizer for a particular crop or piece of land, but that's only part of the picture.

If we don't see fertilizer as part of the total farming operation, we're likely to miss seeing the forest because of the trees. Farmers need the whole picture—not just parts of it. I believe the fertilizer industry realizes its own

(Continued on page 26)

Agricultural Research and the Fertilizer Industry*

By ROBERT M. SALTER

*Chief, Bureau of Plant Industry, Soils, and Agricultural Engineering,
Agricultural Research Administration, U. S. Department of Agriculture.*

(Continued from the issue of July 27, 1946)

Now we come to our second question, which is really two questions: Can research find additional profitable uses for fertilizers and what can research do to still further improve the quality of fertilizers or lower plant food costs?

First, I would suggest that we need to re-examine the question of optimum rates of application under conditions where we combine the most advanced methods of producing our crops. In other words, we need to find out how much fertilizer we can profitably use where we grow the latest improved varieties, follow the best known methods of seed bed preparation, planting, and cultivation, use effective measures to control insects and diseases, harvest at the optimum stage and by methods that minimize loss. My guess is that such studies will show that rates presently recommended are considerably below the optimum for such conditions.

This point is well illustrated by experiments now underway in cooperation with the North Carolina Experiment Station. The average yield of corn in North Carolina is about 22 bushels, reflecting the fact that the average corn field in that State is planted to open pollinated corn, thinly spaced, indifferently cultivated and niggardly fertilized. Year before last, in eleven distributed experiments, by combining the use of an adapted hybrid variety, close planting, thorough but shallow cultivation and liberal fertilization an average yield of 72 bushels per acre was produced and yields up to 107 bushels in individual tests. Of special significance is the fact that excellent returns were realized on a fertilizer application of 200 to 300 pounds of 6-8-6 at planting followed by a side dressing of nitrogen fertilizer carrying 100 pounds of N per acre.

As another outlet for wider use we can look to the future development of vast irrigation projects of the West. As present

plans for the irrigation of new land go forward in the Columbia, lower Colorado and Missouri River basins we can look forward to another ten million acres of intensively cropped land as a potential market for fertilizer. From past experience we can predict that such lands will require liberal fertilization, if not immediately, after 10 to 15 years of irrigated cropping. Our knowledge of how to fertilize irrigated lands for greatest profit is painfully inadequate. Research, much more than we have had to date, will be required.

Fertilizer for the Great Plains Area

Another potential outlet, somewhat visionary at present, is the vast area of the Great Plains. Throughout the Plains region, past research has shown little response from applications of fertilizer, frequently injury. But chemical studies of soils from long time experiments show that the fertility level of the plains, especially as regards nitrogen, is steadily declining where wheat, the principal cash crop, is grown. It would seem that, sooner or later, a point will be reached where fertility will replace water as the first limiting factor in production, and fertilizers may find a place. Already nitrogen has been profitably used for increasing the yields of seed of several plains grasses, and the possibility that nitrogen-fertilized grass for forage may eventually compete with wheat on nitrogen-depleted soils may not be too fantastic. The final answer to this question will only come from research.

In addition to finding new uses, another research task, no less essential to the health of the fertilizer industry, is to keep fertilizer recommendations in the older fertilizer using areas geared to changing needs as these shift through the cumulative effects of established fertilizer practices. The idea is untenable that because a certain application of a partic-

ular ratio is initially most profitable, it will continue so indefinitely. In cooperation with several Atlantic and Gulf Coast States we have recently undertaken a study of the fertility status of soils in potato-growing areas where growers traditionally apply a ton or more of fertilizer per acre. Through simple arithmetic we knew that these farmers were applying several times as much phosphorus as the crop removed and this fact, together with the well known fact that little applied phosphorus is lost through leaching, led us to suspect that growers might not be realizing returns from the amounts of phosphorus currently being applied. Chemical analysis of many of these soils showed large accumulations of available phosphorus, and field tests showed little or no reduction in potato yields on such soils when the phosphorus content of the fertilizer was materially reduced or even eliminated.

More precise methods for diagnosing fertilizer needs are still a challenging problem for research. Its solution would redound to the benefit of both the consumer and manufacturer of fertilizers. I say this with full recognition of the value of the long established methods of field plot experiment and of the more recently developed methods of quick soil tests, tissue analysis, and the recognition of deficiency symptoms in plants. I believe most agronomists will agree that, in arriving at what is the correct fertilizer recommendation for a given crop on a particular soil, the most that can be said for present methods is that they permit a little more refinement in our guessing. Our recommendation, after all, is largely based upon our general knowledge of the results of field experiments and farmer experience. Without minimizing the complexities of the problem, I am at least hopeful, if not fully confident, that some day research will give us self-contained testing methods which will indicate both the rate and kind of fertilizer most likely to yield maximum benefits on a given crop and soil.

Increasing Quality and Lowering Costs

Now we come to our final question, what can research do to further improve the quality of fertilizers or lower plant food costs? This is probably the \$64 question, since fertilizers now are among the cheapest commodities purchased by farmers and their quality, measured in terms of plant food availability, is not far below the theoretical maximum.

Probably first consideration still should be given to reducing the final cost of plant food placed in the soil by increasing the concen-

tration of mixed fertilizers. The practical limits will depend on unit costs of plant food in various materials at the mixing plant and on the distances the final product is shipped. These will vary in different regions. An average plant food content of 25 per cent appears practical for the country as a whole from both technical and economic points of view. There will be some areas, of course, where the availability of cheap low-analysis materials will make it unprofitable, both for the farmer and manufacturer, to exceed or even reach 25 per cent. On the other hand, there are some areas where the most economical concentration should reach at least 30 per cent and perhaps go as high as 40 per cent.

We recognize that, as the concentration of the major plant foods is increased, there is progressively less room not only for conditioning agents but for the secondary elements, calcium, magnesium and sulphur, and for the trace elements, manganese, boron, copper, and zinc. However, calcium and magnesium usually can be applied more cheaply and adequately in the form of locally produced limestones. Sulphur, now relatively unimportant, may become critical in a few regions if the amount of ordinary superphosphate in mixtures is greatly reduced. Trace elements are required in such small amounts, if at all, that their inclusion will not be a serious problem, except perhaps in the most concentrated mixtures.

Problems of formulation, caking, segregation, moisture control, and drillability will increase with concentration. Granulation and better packaging undoubtedly will provide the solution to many of these problems, and research to the rest.

The Minor Elements

Increased recognition of the role of the minor elements in plant nutrition, and better delineation of the areas in which soil deficiencies of these elements occur are focusing attention on their inclusion in mixed fertilizers. Examples are the need for boron on alfalfa in the South and East, for certain vegetable crops along the east coast, and for sugar beets on particular soils; the need for copper and manganese on crops in the Florida Everglades; and the need for zinc on pecan trees. Inclusion of these elements in mixtures is primarily a question of determining the proper quantities for specific soil and crop conditions.

A promising field for research is in developing non-leaching synthetic compounds which will gradually release nitrogen to plants

(Continued on page 22)

THE AMERICAN FERTILIZER

ESTABLISHED 1894

PUBLISHED EVERY OTHER SATURDAY BY

WARE BROS. COMPANY

1900 CHESTNUT ST., PHILADELPHIA 3, PA.

A Magazine international in scope and circulation devoted exclusively to the Commercial Fertilizer Industry and its Allied Industries

PIONEER JOURNAL OF THE FERTILIZER INDUSTRY

A. A. WARE, Editor

C. A. WHITTLE, Associate Editor

K. F. WARE, Advertising Manager

JOHN C. BAKER, Washington Editor
1129 Vermont Ave., Washington 5, D.C.

E. A. HUNTER, Southern Advertising Manager
2246 E. Lake Road, N. E.,
Atlanta, Ga.

REPRESENTATIVE

WILLIAM G. CAMPBELL
123 W. Madison St., Chicago, Ill., Phone—Randolph 4780

ANNUAL SUBSCRIPTION RATES

U. S. and its possessions, also Cuba and Panama.....	\$3.00
Canada and Mexico.....	4.00
Other Foreign Countries.....	5.00
Single Copy.....	.25
Back Numbers.....	.50

THE AMERICAN FERTILIZER is not necessarily in accord with opinions expressed in contributed articles that appear in its columns. Copyright, 1946, by Ware Bros. Company.

Vol. 105 AUGUST 10, 1946 No. 3

Principal Articles in This Issue

	PAGE
MEETING OUR PLANT FOOD NEEDS, by W. A. Minor.....	7
AGRICULTURAL RESEARCH AND THE FER- TILIZER INDUSTRY by Robert M. Salter (Continued from the July 27th issue)...	10
OPA Sets New Ceilings on Fertilizer Materials.....	12
Davison Buys Southern Phosphate Corp- oration.....	13
Fertilizer Bills Die as Congress Adjourns.	13
FERTILIZER PROSPECTS IMPROVE, by Clifton A. Woodrum.....	14
FERTILIZER MATERIALS MARKET	
New York.....	15
Philadelphia.....	17
Charleston.....	17
Chicago.....	18
May Sulphate of Ammonia.....	20
May Superphosphate Production.....	20

OPA Sets New Ceilings on Fertilizer Materials

With the revival of the Office of Price Administration, a number of changes in the ceiling prices of fertilizer materials have been announced. Most of the changes had been worked out before the old term of OPA expired on June 30th but could not be announced before that date. The OPA statements regarding these changes are as follows:

Nitrates

Importers' ceilings on nitrate of soda and nitrate of soda-potash—important fertilizer materials—have been increased \$5.50 per ton, bulk and bagged.

On sales to fertilizer manufacturers, the new ceilings, effective July 27, 1946, are \$35.50 per ton on nitrate of soda and \$43.50 per ton on nitrate of soda-potash—both f. o. b. cars at the importer's port warehouse from which delivery is made. The increases correspond to those made in the selling prices of Chilean suppliers because of the removal of the subsidy and increased costs of production and transportation. Farmers will pay about 12 per cent more for these fertilizer materials.

These increases were made in consideration of the world-wide fertilizer shortage and because Chilean producers indicated they were unwilling to continue supplying United States users at current ceilings.

Ammonium Sulphate

Producers' maximum prices, f. o. b. point of production, of ammonium sulphate have been increased an average of about 10 per cent in all but 11 western states. The new ceiling is \$30 per ton, bulk.

The states in which this action, effective July 27, 1946, does not apply are Washington, Oregon, California, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming. Previously, ammonium sulphate was priced in most of the country on a delivered basis with restrictions on freight charges designed to provide uniform prices to buyers located in the same area. Under allocation controls requiring proper distribution, this pricing method worked satisfactorily. With allocation controls removed and the producer required to pay the freight, the area of distribution had tended to narrow down to the area nearest the coke ovens where sulphate of ammonia is produced.

The new increase on sales to fertilizer manufacturers in states east of the 100th meridian is expected (1) to provide better distribution because sellers are not required to absorb freight costs and (2) to encourage increased production. No increase has been provided in the 11 western states because no evidence has been presented to indicate need for price adjustment there.

Superphosphate

Producers' maximum prices of superphosphate, used to provide phosphoric acid for fertilizers, have been increased an average of about \$1 per ton.

These increases, effective July 27, 1946, reflect additional labor costs and costs arising from recent freight rate increases ranging from three to 11.3 per cent. A comparison of old and new ceilings at two important producing points follows:

1. Baltimore, Md.—from 65 cents to 70 cents per unit of phosphoric acid.
2. Savannah, Ga.—from 57 cents to 61 cents per unit of phosphoric acid.

The amount of these increases will be added to ceilings at all levels and will be reflected in retail prices of mixed fertilizers and superphosphate.

Davison Buys Southern Phosphate Corporation

Chester F. Hockley, president of the Davison Chemical Corporation announced on August 1st that his company had purchased the mining properties of the Southern Phosphate Corporation, Bartow, Florida, which will become the Phosphate Rock Division of Davison. The Southern Phosphate Corporation is engaged in the mining and refining of Florida land-pebble phosphate rock. The Florida deposits are particularly well suited to the application of mass production methods. The surface mining of Florida phosphate rock is done by a combination of electric drag-line excavators, and hydraulic mining.

Mr. Hockley stated that the Phosphate Rock Division will furnish phosphate rock to the corporation's several plants. The acquisition of the Florida mines places Davison in a very advantageous position in the fertilizer and chemical industry, as they will supply their own phosphate requirements in addition to being able to supply tonnage of

essential phosphate for industry and agriculture at home and abroad.

In announcing the purchase of the Southern Phosphate properties by the Davison Chemical Corporation, Mr. Hockley stressed the fact that the present operating personnel of the Southern Phosphate Corporation would be retained.

William H. Gabeler, formerly General Superintendent of the Corporation's Curtis Bay Works and more recently a member of the Engineering and Process Division of the Davison Corporation, has been appointed Manager of the Phosphate Rock Division, with headquarters in Baltimore, Maryland.

Fertilizer Bills Die as Congress Adjourns

With the adjournment of the 79th Congress on August 2nd, a number of bills which would have increased the participation of the federal government in the manufacture and regulation of fertilizers and fertilizer materials were allowed to expire in committee without being brought to a vote in both houses of Congress.

The principal bill to which the industry objected was that introduced in the House by Representative Lemke and later in the Senate in practically similar form, by Senators Guffy, Downey, Kilgore, Tunnell and Pepper. This would have required a federal license by every manufacturer or dealer of fertilizers doing an interstate business and would have established labeling requirements on all such fertilizer. As this would duplicate the labeling and inspection requirements of the various states, it was opposed by the state fertilizer control officials, and was never considered to have much chance of being enacted into law.

The Hill-Bankhead-Flannagan Bills which would have put the federal government in the fertilizer manufacturing business on a large scale, were never reported out from Committee. An attempt to have a superphosphate plant constructed by TVA at Mobile, Ala., was made in the Senate by adding a \$3,000,000 amendment to the Government Corporations Appropriations Bill, but such opposition developed in the House that before final passage of the bill, this item was withdrawn. It is expected, however, that legislation similar to the Hill-Bankhead-Flannagan Bills will be introduced when the 80th Congress convenes next January.

Fertilizer Prospects Improve

By CLIFTON A. WOODRUM,

President, American Plant Food Council, Inc.

American fertilizer manufacturers again expect to have a record-breaking production for the coming season, which means farmers will have a little more fertilizer than in the 1945-46 period.

Increases in fertilizer production for the coming season are anticipated despite shortages of building materials, machinery, labor, some transportation facilities and difficulties in procuring phosphate rock. Slightly larger deliveries to farmers are expected notwithstanding the fact that unusually heavy exports will be made to war-torn countries.

Supplies of nitrogen, phosphoric acid and potash, essential ingredients used in the manufacture of fertilizer, will be more than double the 1930-40 average annual consumption. However, world demands still will be in excess of supplies.

USDA officials estimate the 1946-47 nitrogen requirements at 800,000 tons while the total supply for the United States is estimated at 812,933 tons for the coming season, or 487,933 tons above the average annual consumption during the 1930-40 period. Exports for 1946-47 approved by the Combined Food Board will total 97,025 tons, thus leaving the United States and possessions 715,908 tons or about the same as in 1945-46.

Potash supplies for 1946-47 are expected to total 899,582 tons (K_2O) or 571,500 tons above the 1930-40 annual consumption. Of the total supply during the coming season, the Government has allocated 55,859 tons for export and 77,714 for chemical manufacture, thus leaving American farmers about 766,000 tons compared with the estimated 1945-46 consumption of 740,000 tons. USDA's officials estimate potash requirements for the 1946-47 season at 800,000 tons (K_2O)

Sulphate of potash supplies will be about 36,000 tons (K_2O).

Phosphate (basis 18 per cent P_2O_5) supplies for the coming season are expected to about 8,333,333 tons which compares with an annual average consumption during 1930-40 of 3,500,000 tons. Estimated requirements for the coming season are placed at approximately 10,000,000 tons or more than 2,500,000 tons above the estimated consumption for 1945-46. A War Production Board survey shows that the 1945 plant capacity for phosphate (basis 18 per cent P_2O_5) was 11,500,000 tons or 1,500,000 tons above the estimated requirements for the coming season. Capacity production can be expected to meet growing agricultural needs just as rapidly as building materials, equipment, labor and phosphate rock bottle-necks are broken.

Despite war-time fertilizer production achievements officially described by the USDA official as "phenomenal," manufacturers have set in motion an extensive expansion program to meet the growing needs of American agriculture. More than 30 new fertilizer plants were either started during the war or projected for construction by private industry, in addition to the reconditioning and expansion of numbers of other plants designed to increase the production of plant food.

The fertilizer industry is keenly aware of its responsibility in meeting the plant food requirements of American farmers and is not content to rest upon record-breaking war-time production laurels. Constant efforts are being made to obtain machinery, repair parts, labor, building materials and other essentials for the expansion program.

Phenomenally-large demands for fertilizers in the Mid-west have been recognized in the expansion planning of the industry with the result that a number of plants have been built or projected for construction in the mid-western and west coast states.

BRADLEY & BAKER

FERTILIZER MATERIALS · FEEDSTUFFS

AGENTS · IMPORTERS · BROKERS

**155 E. 44th Street
NEW YORK**

Clinton St. & Danville Ave.
Baltimore, Md.

BRANCHES

505 Royster Building
Norfolk, Va.

Barnett Bank Building
Jacksonville, Fla.

504 Merchants Exchange Bldg., St. Louis, Mo.

FERTILIZER MATERIALS MARKET

NEW YORK

New Ceilings on Sulphate of Ammonia, Nitrate of Soda and Superphosphate Announced. Fertilizer Exports Increase 80 Per Cent. Allocation of Sulphate of Ammonia Expected. Demand Exceeds Supply on All Materials.

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, AUGUST 5, 1946.

With the reinstatement of OPA controls a number of new maximum prices for basic fertilizer materials has been announced during the past week. As was anticipated, the ceiling on ammonium sulphate has been set at \$30 per ton in bulk f.o.b. point of production. The new ceiling is effective as of July 27th, but does not apply to certain Western states. Nitrate of soda has been advanced \$5.50 per ton in bulk and bagged as a result of the removal of subsidies to the Chilean suppliers and increased cost of production and transportation. Also effective July 27th are new maximum prices on superphosphate, which average about \$1.00 per ton at producing points. All of these price changes are made by means of amendments to RMPR-205. It is probable that in the future any further increases in maximum prices can only be brought about by recommendation of the Fertilizer Industry Advisory Committee.

During the first ten months of the past fertilizer year more than one million tons of fertilizers were exported from this country, which is an increase of approximately 80 per cent over the same period a year ago. Imports for the first ten months of the same period amounted to approximately one million tons, a decrease of approximately 20 per cent over the previous period. It is estimated by UNRRA that the liberated areas of Europe will require about \$140,000,000 worth of fertilizers to take care of 1947 crops.

Sulphate of Ammonia

The announcement of prices for the new season has not brought about the placing of forward contracts as producers are awaiting the results of current negotiations to place this material under government allocation. Demand for the new season is extremely heavy and will undoubtedly remain unfilled in most areas.

Nitrate of Soda

Except for the recently announced higher ceiling, there are no new developments in this market. Both domestic and imported materials remain tight, with production and imports moving as soon as available.

Organic Materials

Recent sales at increased prices to the feed trade have retarded the movement of organics into the fertilizer market. Fish scrap and meal, bone meal, tankage, dried blood, have all advanced sharply during the past two-weeks' period. Foreign offerings are practically non-existent at this time.

Superphosphate

Fertilizer mixers are taking all material available at the new schedule, but demand continues to exceed production. During the first eleven months of the fertilizer year just concluded, production amounted to well over five million tons, an increase of approximately 14 per cent over the corresponding period a year earlier.

Phosphate Rock

It is reported that shipments from the mines are somewhat behind schedule and this market remains very tight at the recently advanced figure. Some producers have been able to obtain new equipment, and it is thought likely that an increase in production capacity will be brought about soon.

Potash

Producers are still awaiting allocations before making contracts for the new season. Settlement of this question is expected daily, and it is not anticipated that a higher ceiling will be authorized by OPA.

RAYMOND Multi-Wall PAPER SHIPPING SACKS

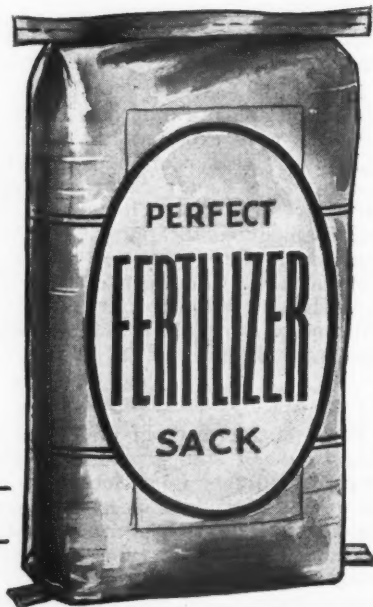


**As much alike as
PEAS IN A POD!**

Uniformity is one of the reasons why leading fertilizer producers specify Raymond Multi-Wall Paper Shipping Sacks. Uniformity in size promotes efficiency at the packer's, makes them easy to handle and easy to stack. Uniformity in strength assures dependable protection for the fertilizer. Uniformity in appearance gives the product a Quality look. Uniformity in color printing of trade marks or brand names is also an important characteristic of Raymond Shipping Sacks. Raymond Quality Shipping Sacks give a fine fertilizer a Quality look that wins new buyers and holds old ones.

THE RAYMOND BAG COMPANY
Middletown, Ohio

RAYMOND MULTI-WALL PAPER SHIPPING SACKS



PHILADELPHIA

Greater Sales of Mixed Goods than Usual at This Season. Manufacturers Dubious over 1947 Materials Supply

Exclusive Correspondence to "The American Fertilizer"

PHILADELPHIA, AUGUST 5, 1946.

Mixed fertilizers are moving out in much greater volume than is customary at this season, which might indicate that some farmers do not intend to be caught too short. Mixers, however, are not soliciting orders, and the trade as a whole is not very comfortable as to what to expect in the way of raw materials during the 1946-7 season. It seems pretty well assured that phosphoric acid will be in ample supply, but it is expected that the supply of nitrogen and potash may be somewhat under the past season. The situation in organics is worse now than ever before, with no material improvement in view.

Sulphate of Ammonia.—Market is firm at the higher ceiling recently established and there is serious talk of again placing this article under allocation. Shipments are behind schedule and shortage is expected to continue.

Nitrate of Soda.—Effective July 27th the price increased \$5.50 per ton. The domestic production is still much restricted due to the shortage of soda ash.

Castor Pomace.—No business is reported.

Blood, Tankage, Bone Meal.—Market unsettled, supply still scant and sales of blood reported as from \$9.00 to \$11.00 per unit of ammonia (\$10.94 to \$13.37 per unit N). This material now goes to the feeding trade. No movement of bone meal reported.

Fish Scrap.—Over a short period there were sales at various prices, ranging from \$125.00 to \$140.00 per ton and shipments were actually made at these figures for unground scrap. This article is now back under price control. It goes to the feeding trade.

Phosphate Rock.—There is active demand, with the market tight, and shipments some-

what behind schedule. There is good export inquiry, but not sufficient supply to take care of it.

Superphosphate.—There has been an average price increase of about \$1.00 per ton, but there is said to be some confusion as to the maximum selling schedules on triple superphosphate. In any event, contracts that are being made provide that increased costs shall be for account of the buyer.

Potash.—Shipments are coming through fairly well, with demand active, and a realization that allocation seems the best method of insuring equitable distribution.

CHARLESTON

Materials Ceilings Advanced on Some Materials. Higher Mixed Fertilizer Ceilings Expected. Demand Continues Strong.

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, AUGUST 5, 1946.

Advances in leading fertilizer materials and increased freight and labor costs will necessitate increased costs of mixed fertilizers to the consumer but as yet the OPA has not announced any new increases.

Organics.—Situation still tight with higher prices being established on leading organics. Bone meals, castor pomace, fish scrap, blood, etc., are reported held at higher price levels; and production is below previous years. South American prices remain high and no great quantity being offered. European organics still being held in Europe.

Bone Meals.—Sixty per cent feeding grade sold at \$65.00 f.o.b. Chicago. Raw 4½ and 45 quoted at \$77.50 c.i.f. Atlantic and Gulf ports for shipment from South America.

Castor Pomace.—Sold at \$6.00 per unit ammonia (\$7.29½ per unit N) at producing points, for prompt shipment.

Blood.—Quoted at \$10.00 to \$10.50 per unit ammonia (\$12.16 to \$12.76 per unit N) f.o.b. American producing points; as high as

Manufacturers'
Sales Agents for **DOMESTIC**

Sulphate of Ammonia

Ammonia Liquor

::

Anhydrous Ammonia

HYDROCARBON PRODUCTS CO., INC.

500 Fifth Avenue, New York

\$11.40 (\$13.86 per unit N), c.i.f. for South American.

Fish Scrap.—Bulk price now up to \$135.00 per ton, f.o.b. Eastern producing points. Majority of fish catch going to feed market at prices up to \$165.00 per ton for 65 per cent fish meal.

Nitrate of Soda.—The Chileans have just advanced their prices \$5.50 per ton for bulk and bagged nitrate of soda. This advance is caused by removal of subsidies by the Government. Whether domestic producers will advance their nitrate of soda prices remains to be seen. These advances have been okayed by the OPA as of July 27, 1946.

Ammonium Sulphate.—OPA ceiling is now \$30.00 per ton in bulk, f.o.b. producing mill and sales have been reported for some time as having been made at this figure.

Superphosphate.—Maximum prices allowed producers by OPA are as follows: Baltimore, 70 cents per unit A.P.A. (increased from 65 cents); Savannah, 61 cents per unit A.P.A. (increased from 57 cents). Other points are allowed proportionate increases to take care of increased costs in rock, freight and labor, etc.

Phosphate Rock.—Demand still exceeds supply and export inquiry remains strong.

CHICAGO

Demand for Organics Continues Despite Price Increase. Sellers Not Making Offerings for Present.

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, AUGUST 5, 1946.

Insistent demand for organics continues, particularly from certain territories. Unfortunately, sellers seem to be in no position to make offerings, and when they do have stock, will allocate it as best possible.

Meat protein asking prices vary from \$115.00 to \$130.00 per ton for 60 per cent digester tankage, though none of the producers care to make sales.

CLASSIFIED ADVERTISEMENTS

Advertisements for sale of plants, machinery, etc., and for help and employment in this column, same type as now used, 60 cents per line, each insertion.

WANTED to purchase—outright or controlling interest in going fertilizer business. Address "205" care THE AMERICAN FERTILIZER, Philadelphia 3, Pa.

WANTED—Man with selling experience and general knowledge of fertilizer and feed industry, to help develop fertilizer department in established New York export and import company. Address "210" care THE AMERICAN FERTILIZER, Philadelphia 3, Pa.

CASE HISTORY No. 7

One in a series of factual experiences of a group of American manufacturers with Multi-wall Paper Bags.

COST COMPARISON

	50 lb. Open Mouth Burlap Bags	50 lb. Multiwall Paper Valve Bags
Bag cost per M	\$129.55	\$86.80
Bag cost per 50 lbs.	.129	.086
Labor cost per 50 lbs.	.013	.007
Total bag and labor cost per 50 lbs.	.142	.093
Saving per bag paper over burlap		.049
Saving per ton paper over burlap		1.96

DETAILS OF LABOR COSTS

	Production per Hour	Cost per 50 lbs.
Burlap bags		
1 man filling, weighing, closing and handling at 80¢ per hour	3000 lbs.	.013
Multiwall Paper Valve Bags		
1 man filling and handling at 80¢ per hour	6000 lbs.	.007

CLASS OF PRODUCT PACKED

CEMENT	FERTILIZER
CHEMICALS	FOOD ✓
FEEDSTUFFS	MISCELLANEOUS

PRODUCT CHARACTERISTICS

ABRASIVE	GRANULAR
CORROSIVE	HEAVY
DELIQUESCENT	HYGROSCOPIC
FLUFFY	LIGHT ✓
FREE-FLOWING ✓	VISCOUS

ST. REGIS BAG PACKAGING

SYSTEMS are made in a variety of capacities, speeds, and manpower requirements to suit specific products and plant layouts. Machines are available in types to meet the special characteristics of a wide range of products, with filling speeds as high as twenty-four 100-lb. bags per minute — with one operator.

INSTALLED AS A SANITARY MEASURE...

A SANITARY PACKAGE

This tough Multiwall container preserves the contents in its original purity by protecting it from dirt, dampness, and all foreign impurities. The Clean Freshness of Ideal Dog Crumbles stays in. All harmful contamination stays out.

Dog Foods
ALL TERRIER

What you see through the glass shows the tribute to Multiwalls printed on his bags by this prominent dog food manufacturer.



ST. REGIS SALES CORPORATION

(Sales Subsidiary of St. Regis Paper Company)

NEW YORK 17: 230 Park Ave.

CHICAGO 1: 230 No. Michigan Ave.

BALTIMORE 2: 2601 O'Sullivan Bldg.

SAN FRANCISCO 4: 1 Montgomery St.

this ST. REGIS PACKAGING SYSTEM

1—Reduced container costs 35%

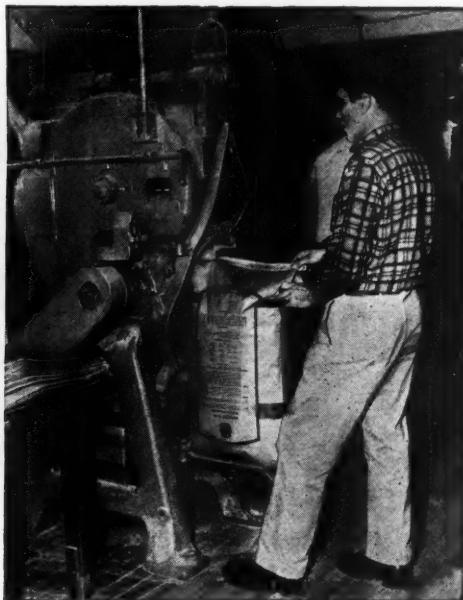
2—Increased production 100%

3—Reduced labor costs 46%

Primarily interested in protecting his product against dirt and other forms of contamination, Mr. Waller Mowll, president of the Old Trusty Dog Food Company, soon found that a St. Regis Packaging System not only gave him the desired protection, but also saved money through reduction of labor and container costs, and doubled production.

This Case History proves again that St. Regis packers, adapted to the particular type of product, and Multiwall paper bags, tailored to suit the customer's specific requirements, can speed production and save money for the small concern needing a single packer, as well as for the big cement, chemical, foodstuff, or fertilizer producer requiring batteries of high speed packers.

For the full story on how this company packed a better dog food in a better container, and how these principles may be applied to *your* business, mail the coupon.



Without obligation, please send me full details regarding "Case History" No. 7, outlined above.

NAME _____

COMPANY _____

ADDRESS _____

all this coupon for the complete story

Alentown, Pa. Birmingham Boston Cleveland Dallas Denver
Detroit Franklin, Va. Los Angeles Nazareth, Pa. New Orleans
St. Kansas City, Mo. Ocala, Fla. Oswego, N. Y. Seattle Toledo
CANADA: St. Regis Paper Co. (Can.) Ltd., Montreal, Vancouver.

May Sulphate of Ammonia

The production of by-product sulphate of ammonia during May was one-third lower than the April output and less than one-half that of May, 1945, according to the figures of the U. S. Bureau of Mines. Only 31,489 tons were produced during May, compared with 69,316 tons in May, 1945. So far this year the steel, coal and railroad strikes have lowered the sulphate output to about 212,000 tons, which is only 64 per cent of the 1945 figure for the same period.

	Sulphate of Ammonia Tons	Ammonia Liquor Tons NH ₃
Production		
May, 1946.....	31,489	1,466
April, 1946.....	47,222	2,051
May, 1945.....	69,316	2,427
January-May, 1946.....	211,996	9,523
January-May, 1945.....	334,079	11,951
Sales		
May, 1946.....	30,900	1,377
April, 1946.....	52,598	2,011
May, 1945.....	75,994	2,215
January-May, 1946.....	228,311	9,219
January-May, 1945.....	380,570	11,411
Stocks on Hand		
May 31, 1946.....	15,732	510
April 30, 1946.....	15,176	541
May 31, 1945.....	22,252	660

May Superphosphate Production

A drop of 10 per cent in superphosphate production during May was recorded in the U. S. Bureau of Census figures. Figured on the basis of 18 per cent A.P.A., total production amounted to 687,969 tons, compared with 765,314 tons in April, but slightly above the 657,575 tons produced in May, 1945. This seasonal drop is usual during May. The output on concentrated super, however, showed an increase. Stocks on hand at the end of the month dropped to 514,989 tons, which is the lowest figure for any time during the past three years.

	Normal 18% A.P.A.	Concen- trated 45% A.P.A.	Base Goods 18% A.P.A.
Production			
May, 1946.....	616,680	26,423	5,231
April, 1946.....	696,879	24,798	6,440
May, 1945.....	606,808	20,006	752
Shipments and Used in Producing Plants			
May, 1946.....	646,725	22,271	4,823
April, 1946.....	869,329	23,884	8,920
May, 1945.....	612,407	17,352	1,287
Stocks on Hand			
May 31, 1946.....	406,619	42,465	2,207
April 30, 1946.....	429,916	36,940	1,733
May 31, 1945.....	673,015	23,460	1,621



AMERICAN POTASH and CHEMICAL CORPORATION

122 East 42nd St.

New York City

Pioneer Producers of Muriate in America

Branch Offices

214 Walton Building
ATLANTA 3, GEORGIA

231 South La Salle Street
CHICAGO 4, ILLINOIS

609 South Grand Avenue
LOS ANGELES 14, CALIF.

MURIATE and SULPHATE of POTASH

Plant foods are urgently needed to grow the crops which feed our nation and our armed forces.

Our plant at Trona, Calif., is operating at capacity to provide supplies of these essential plant foods, and other materials needed in the national effort.

Manufacturers of Three Elephant Borax and Boric Acid

See page 29

Maybe we've been too Modest

ABOUT BEMIS MULTIWALL PAPER SHIPPING SACK FACILITIES

For years, Bemis has been a leading manufacturer of multiwall paper shipping sacks. Six plants, strategically located north, south, east and west, have given Bemis customers in the fertilizer industry the advantages of flexibility and capacity in production.

Even in the face of manufacturing and shipping difficulties during the past few years, this flexibility and capacity, plus the Bemis system of planned production, has enabled us to make an unusual record in fulfilling shipping promises and maintaining quality for our regular multiwall customers.

When you need multiwall paper shipping sacks for your fertilizer, think of Bemis. It pays to be a Bemis Multiwall Paper Shipping Sack customer.



Peoria, Ill.



East Pepperell, Mass.



Mobile, Ala.



San Francisco, Calif.



Wilmington, Calif.



St. Helens, Ore.

Bemis Multiwall Paper Shipping Sacks

Peoria, Ill. East Pepperell, Mass. Mobile, Ala. San Francisco, Calif. Wilmington, Calif. St. Helens, Ore.

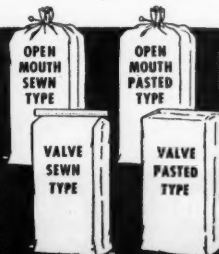
6 PLANTS

BEMIS BRO. BAG CO.

OFFICES: Baltimore • Boston • Brooklyn
Buffalo • Charlotte • Chicago • Denver
Detroit • East Pepperell • Houston • Indian-
apolis • Kansas City • Los Angeles • Louis-
ville • Memphis • Minneapolis • Mobile



New Orleans • New York City • Norfolk
Oklahoma City • Omaha • Orlando
Peoria • St. Helens, Ore. • St. Louis • Salina
Salt Lake City • San Francisco • Seattle
Wichita • Wilmington, Calif.



American Plant Food Council in New Quarters

On July 17th, the officers of the American Plant Food Council were moved to Suite 817-827, Barr Building, 910 17th St., N.W., Washington, D. C. The removal to these larger quarters was made necessary by the expansion of the Council's program of activities and the accompanying increase in their office staff. The telephone numbers are National 8331 and 8332.

Nitrogen Exports for Puerto Rico

Approximately 30,000 tons of sulphate of ammonia and 3,600 tons of ammonium nitrate will be shipped by August 15th from the United States to Puerto Rico for fertilization of the sugar cane crop, the Civilian Production Administration has announced.

Puerto Rican cane producers, large consumers of ammonium sulphate, have been receiving reduced shipments of those fertilizers because of the recent steel and coal strikes.

CPA, at the request of the Departments of Agriculture and Interior, secured the co-operation of the domestic producers in expediting these deliveries in time for fertiliza-

tion of the new crop. The last deliveries were made in early August.

Although these shipments will not entirely fill the Puerto Rican requirements, CPA said that a large share of their immediate needs will be met. Arrangements for further deliveries are being studied.

AGRICULTURAL RESEARCH AND THE FERTILIZER INDUSTRY

(Continued from page 11)

at predetermined, controllable rates. Such compounds should be particularly useful in fertilizing forage and other long season crops and for use on sandy soils where leaching is a problem. Enough work has already been done by our Bureau to demonstrate that compounds having the desired properties can be prepared.

Can similar non-leaching potash fertilizers for sandy soils be developed? Our fertilizer research men think they can.

We have inherited from the wartime munitions industry a large capacity for producing cheap nitric acid. Can this be substituted for sulphuric acid for making available phosphates? The problem has already been studied considerably but merits re-examination in the light of present conditions. The ultimate

**For BETTER PROTECTED
FERTILIZERS... SELECT THE HAMMOND
MULTI-WALL BAG THAT BEST MEETS
YOUR REQUIREMENTS!**



HAMMOND
Betterbags
**WELLSBURG
W. VA.**

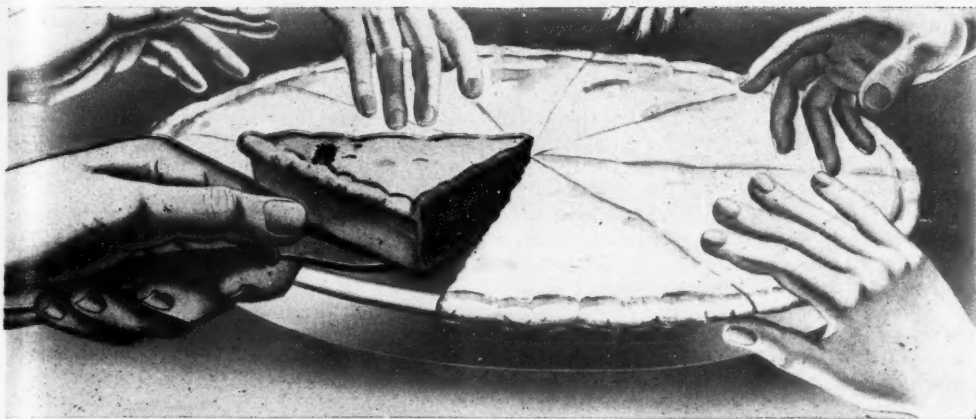


HAMMOND
Betterbags
MULTI-WALL



HAMMOND
Betterbags
MULTI-WALL

HAMMOND BAG & PAPER CO.
Paper Mill and Bag Factory: WELLSBURG, W. VA.



WHY YOUR SLICE OF THE NITROGEN PIE IS SMALLER

NATURALLY, fertilizer manufacturers and farmers do not understand why there isn't enough Spencer high nitrogen fertilizer to go around.

The simple truth is that the quick profit potential to the farmer of ammonium nitrate as a superior nitrogen fertilizer, was hardly realized a few years ago. Now, the amazing soil-restoring and plant-feeding results of Spencer's high nitrogen fertilizer are so well recognized, that the demand greatly exceeds today's increased production.

The Spencer Chemical Company is doing its utmost to meet this unprecedented demand fairly and equitably. However, despite record-breaking production at our great, new, Pittsburg, Kansas, works... we are obliged to share the available supply with as many deserving customers as possible.

Fertilizer Assn. Warns Gov't. Production Will Not Relieve U. S. Demands

Washington, July 1—"American farmers' fertilizer requirements will not be relieved immediately in any way by the entrance of 15 U. S. Ordnance Plants into nitrogen fertilizer production," Maurice H. Lockwood, President of the National Fertilizer Association, declared today in commenting on the War Department's recent announcement.

"Production by these plants is 'to meet the urgent needs of U.S. occupied areas'," said Lockwood, "and the government's plans to 'borrow' supplies from commercial producers will, in fact, cause some temporary inconvenience in this country."

Spencer Chemical
COMPANY

General and Sales Offices: Dwight Building, Kansas City 6, Missouri
WORKS: PITTSBURG, KANSAS



solution may be found in the production of compound fertilizers of the Nitrophoska type.

Is there a possibility of economically utilizing our vast deposits of potash silicates? The problem thus far has baffled solution, and did even before the discovery and development of our western resources of water-soluble potash salts. Perhaps nothing can be done in the face of present potash prices. The fact remains, however, that the deposits of water-soluble potash are far removed from most of the large potash consuming areas, while much of the supply of silicates is in or adjacent to those areas. The problem should not be cast aside as hopeless.

Recent developments in the production of new weedicides, nematocides and insecticides have raised the question of their use in combination with fertilizers. In fact, there is already evidence that such use may be highly desirable in some instances. For example, it appears that the new 2,4-D weed killer may be combined advantageously with fertilizer when applied to turf. Also, outstanding results have been reported from the simultaneous application of DD mixture and ammonia for the control of nematodes and the fertilization of lettuce on irrigated land in the Southwest.

I have mentioned only a few of the advances that may be made through research. That there will be many more, I have no doubt. Both the consumer and manufacturer of fertilizers will benefit. It is up to them both to see to it that the research gets done.

More Research by the Fertilizer Industry

Of course, the fertilizer industry benefits by the government's paternal interest in its customers, the farmers. Government has assumed the primary responsibility for research in both the manufacture and use of fertilizers. The National Resources Planning Board found, in 1940, that 180 manufacturing

industries were investing in research two per cent of the gross value of their products. To have equalled this average the fertilizer industry would have spent over ten million dollars for research in 1945. I need not tell you that the amount you did spend was a pretty small fraction of this figure. Neither need I tell you that the total amount spent by government—state and federal—for research in the fertilizer field probably fell a long way below this mark.

I am not arguing that the fertilizer industry should build up a big research organization to do this job. There are many reasons why government should continue to carry the major responsibility. But, there are some things that the fertilizer industry can and, I believe, should do that will stimulate and expedite the research that needs doing.

First, by procedures that will develop a better public understanding of the contribution that fertilizers make, not alone to the farmer but to the national economy as well, you can assist both state and federal research agencies in getting support for their work.

By sponsoring group meetings of state, federal, and industry research workers interested in common problems you can aid in overcoming one of the chief handicaps to all agricultural research, i. e., the lack of easy contact and interchange between research men working along a given line.

Probably you can spend a little more money advantageously in subsidizing research on special problems through fellowships and grants to States. A little financial oil applied to the squeaks in the research machinery often produces surprisingly good results.

Finally, I think there are now, and will continue to be, many opportunities for effective direct cooperation of your industry with government research agencies, in the fields both of fertilizer use and technology, but especially the latter.



Trade Mark Registered

MAGNESIUM LIMESTONE

"It's a Dolomite"

American Limestone Company

Knoxville, Tenn.

A good, so
operation, eq
WEIGHT 2
form bags at
exception.
Deatur, Ala



A good, sound fertilizer sacking operation equipped with EXACT WEIGHT Sacking Scales. Uniform bags are the rule here, not the exception. Decatur Fertilizer Co., Decatur, Alabama.

Your Profits Depend Upon Uniform Packaging . . .

To the chemical manufacturer who says, I can stand a little over per bag we say you can but you immediately increase your raw material costs. Bags a little under are equalled by those a little over. Are they? Not when weight regulations of various states and customer good will are considered. Why gamble with your weights. The facts are that overweight increases material costs while underweight affects customer good will. Both have a bearing on profits. The uniform, accurate bag corrects both . . . assures a profit . . . protects you all around. How much goes into each bag is important and EXACT WEIGHT Sacking Scales fill that vital need in the fertilizer industry. Write for details today!



SALES and SERVICE

*in all Principal Cities
from Coast to Coast
and Canada*

THE EXACT WEIGHT SCALE COMPANY

901 W. Fifth Avenue
Dept. Oe

783 Yonge St.

Columbus 8, Ohio
Toronto, Canada

Now, in conclusion, I would remind you that scientific research is the Aladdin's lamp of the twentieth century. In the brief period between the two world wars and since, it has spawned a veritable flood of new products and techniques, whose contribution, present and potential, to man's comfort and convenience, to his efficiency and escape from toil, to his health and longevity, and unfortunately, to his powers of self destruction, make the magic of Aladdin's time seem childish and impotent. Already here, or coming, we see a vast array of light metals and alloys in unbelievable abundance; new plastics by the score, including the phenomenal silicones, compounds of silicon and carbon; a dozen new synthetic rubbers, some greatly superior to natural rubber for special uses; new fibers—rayon, nylon and fiber glass with ten times the tensile strength of steel; disease-destroying drugs—the sulfa-compounds, atebirin and synthetic quinine, and the even more potent antibiotics, penicillin, streptomycin, and a new one, "tomatin" recently found in wilt-resistant tomato plants; the powerful insect killers, DDT and benzene hexachloride; hormone-like chemicals like 2, 4-D which in unbelievably low concentration kill weeds, stick apples on trees, produce seedless tomatoes and ripen green fruit; rockets and jet

propulsion aircraft with near supersonic speeds; and last but by no means least, such miracles of electronics and radiation as black light, induction heating, television, radar, and atomic power. These products of science, unknown a mere three decades ago, are but portents of what scientific research will contribute to man's material civilization in the years ahead. Following a world war, finally won by technological superiority, peoples throughout the world are awake to the role that science must play in their future welfare and advancement, both as individuals and as nations.

Industry as a whole is moving ahead at ever increasing tempo through technological improvement. Agriculture and the industries serving agriculture cannot afford to lag behind in their use of the tools of science.

MEETING OUR PLANT FOOD NEEDS

(Continued from page 9)

long-time interest in keeping fertilizer education closely integrated with general agricultural education.

An outstanding fact relating to future consumption of fertilizer is the sharp increase in demand in the Middle West. As you know, in the western part of the north central area, farmers are using nearly three times as much fertilizer as in 1941. And they would take more if they could get it. The increased demand in the Middle West is at one and the same time a part of our current problem and a factor in our long-term considerations.

In any current situation it is difficult to separate the short-term and the long-term aspects of the problem because they are always so closely tied together. That is certainly true of the current fertilizer situation. However, it is important to attempt to separate them because they may require at least two different types of remedial action. Therefore, I should like to summarize both phases of the problem before discussing remedies.

The long-term phase of the problem, as I have already discussed it, can be summarized about like this: We will need to use more plant food material than we have ever used before if we are to develop the kind of farming systems that we need in this country in order to conserve and rebuild our soil resources, provide for balanced and abundant farm production, and put our increasing knowledge of nutrition into practice. And much of the increased use will need to come in regions which do not now use fertilizer extensively.

The short-term problem seems to me about

SULPHURIC ACID



Production
Recovery
Concentration

Whether your production requirements involve large or small quantities, consult the CHEMICO engineers for authoritative advice and recommendations. CHEMICO designs, remodels and builds complete acid and fertilizer plants, and CHEMICO recommendations are based on 30 years of specialized experience. Your inquiry is invited, and will involve no obligation.

Chemical Construction Corporation
350 Fifth Ave., New York 1, N. Y.

**CHEMICO PLANTS are
PROFITABLE INVESTMENTS**

IT'S THE FARMER'S ANSWER

A world devastated by war calls on the American farmer to help feed its starving millions. And here is the farmer's answer . . . healthy crops that promise abundant yields.

Your products have played a great part in making this magnificent answer possible. Fertilizers, most of them compounded with Potash, give new life to old soil. Potash is not only a vital soil nutrient, but an insurance against plant disease and drought.

Sunshine State Potash has an important role in providing the right answer to a world hunger problem.



UNITED STATES POTASH COMPANY

Incorporated

30 Rockefeller Plaza, New York 20, N. Y.

HIGRADE
MURIATE OF POTASH
62/63% K₂O

GRANULAR
MURIATE OF POTASH
48/52% K₂O

MANURE SALTS
22/26% K₂O



Reg. U. S. Pat. Off.

like this: Neither the United States nor the world in general has as much fertilizer as it needs this year. More fertilizer would help to shorten the period of the world food emergency. We need more fertilizer in this country in order to meet the export food demands for famine relief as well as the unprecedented domestic food demand based on buying power. We also need to provide for proper distribution among the various producing regions, recognizing that current requirements do not conform to pre-war distribution.

Our military forces occupying Germany and Japan need fertilizer in order to increase the food supplies of our former enemies above levels which are so low as to foster unrest among those peoples and therefore endanger our occupying forces.

The liberated countries—those which are buying and those which are receiving relief—desperately need fertilizer to overcome the ravages of war, to get production rolling, and to get their dietary levels up from the hunger line to health-promoting levels. We have a humanitarian interest in the hungry people and we also have a very practical interest—one which we must back with speedy assistance—for the inevitable result of prolonged hunger is political chaos. Political chaos often has far-reaching international consequences. At any rate, we know that the kind of world for which we have fought and sacrificed cannot be built on hunger and unrest.

Nitrogen Supplies

Of course, the need for fertilizer is not confined to the occupied and liberated countries. India and China, for example, have an acute shortage which is reflected in the world food shortage. Several countries that are supplying food exports feel that they could increase their exports of food if they had more fertilizer and nearly all of the countries that are short of food feel that they could come nearer meeting their own requirements if they had more fertilizer. The world food shortage calls for prompt action to increase the fertilizer supply. Probably the greatest responsibility for action falls upon the United States because our unused nitrogen-producing capacity offers

the greatest opportunity for improving the situation and doing it quickly.

That brings me to the current program of action. As you know, the Government has recently disposed of two of its synthetic ammonia plants to private operators. Negotiations are under way for similar disposition of three other plants. The Department of Agriculture has been urging the conversion and use of plants with a combined rated capacity of 300,000 tons of nitrogen. This objective will be accomplished if the current negotiations are completed. We are now anxious, because of the emergency, to have the plants converted as rapidly as possible. I can think of few things any industry could do that would serve the public interest so well as an increase in the production of fertilizer nitrogen at this time.

Beyond this the War Department recently announced that it will operate during the emergency three ordnance ammonia plants and twelve subsidiary plants that are needed to process the ammonia into fertilizer material. These plants are capable of turning out ammonium nitrate at the rate of about 70,000 tons a month. That would be about 23,000 tons per month of nitrogen. The War Department is particularly concerned, of course, with the nitrogen requirements of the occupied countries. It is entirely appropriate that the army should supply those requirements for itself since it is not able to buy the supplies commercially without cutting fertilizer supplies and thereby food supplies in other countries.

Phosphate Supplies

As to the phosphates, there is a definite world shortage of about 3,000,000 tons of rock. Although serious, the phosphate shortage is probably not so critical on a world-wide basis as is nitrogen. In this country the Department of Agriculture is intensely interested in getting production increased. To increase the supply of sulphuric acid an effort is being made to get an additional ordnance plant into production under a private operator. We're hoping this will bring results.

We have been working closely with the Civilian Production Administration to help

	FERTILIZER PLANT EQUIPMENT				
	Dependable for Fifty Years	All-Steel Self-Contained Fertilizer Mixing Units	Batch Mixers— Dry Batching Pan Mixers— Wet Mixing	Swing Hammer and Cage Type Tailings Pulverizers	Vibrating Screens Dust Weigh Hoppers Acid Weigh Scales
Founded 1834					

STEDMAN'S FOUNDRY & MACHINE WORKS 505 Indiana Ave. AURORA, INDIANA, U.S.A.

ALEX. M. McIVER & SON

Specializing

Nitrogenous Materials

Blood and Fertilizer Tankage

Phosphate Rock

Bone Meals

Dolomitic Lime

(42—44% Magnesium Carbonate)

BAGS

SOUTH AMERICAN DRY

RENDERED TANKAGE

PEOPLES OFFICE BUILDING

Charleston, S. C.

Keyed SERVICE!

Fertilizer plants all over the country—large and small—state their needs and we meet them. Large stocks of seasoned materials and ample modern production facilities enable us to make prompt shipments.

TRIPLE SUPERPHOSPHATE

46 to 48% Available Phosphoric Acid

We also manufacture

HIGH-GRADE SUPERPHOSPHATE

U. S. Phosphoric Products

Division

TENNESSEE CORPORATION

Tampa, Florida

New York Office:

61 Broadway

Washington, D. C.

440 The Woodward Bldg.

Sales Agents:

Bradley & Baker

155 East 44th St.

New York, N. Y.

A Mark of



Reliability

SPECIFY THREE ELEPHANT



..... WHEN BORON IS NEEDED TO CORRECT A DEFICIENCY OF THIS IMPORTANT SECONDARY ELEMENT

Agricultural authorities have shown that a lack of Boron in the soil can result in deficiency diseases which seriously impair the yield and quality of crops.

When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

AMERICAN POTASH & CHEMICAL CORPORATION

122 East 42nd ST., NEW YORK CITY

Pioneer Producers of Muriate of Potash in America

See Page 30

phosphate rock producers meet the great demands that have taxed their facilities. Obviously, we will continue to provide whatever help we can.

Over the long pull, if not immediately, western resources of phosphate rock should be further developed. The largest part of our known deposits of phosphate rock lies in the states of Idaho, Montana, Utah, and Wyoming. So far, most of the phosphate fertilizer is produced and used in the east. However, it would seem wise from the standpoint of both the industry and the public to meet more of the increasing demands from the western deposits, to the extent that that is possible. I am sure the industry is already devoting some attention to this matter.

Potash Supplies

As far as potash is concerned, the answer to the current world shortage seems to depend upon what can be accomplished in Germany. The War and State Departments are fully aware of the needs for German potash and I am sure they will do whatever they can to increase the German output promptly.

In our own country the Government has accepted the recommendations of the potash industry representatives and fertilizer industry advisory committee and is allocating potash in order to help meet distribution problems. Historic distribution patterns have been outmoded by the rapid increase in use of potash in the Middle West and simultaneous large increases in the South Atlantic and other regions. During this emergency period there seems to be no alternative but to allocate supplies. However, we must realize that allocation is only a temporary measure. It is not a permanent solution. The answer is to remove the need for allocation.

One thing that's necessary is to find out how much potash we have in this country. We need surveys and explorations as first steps toward finding the ultimate answer to

the potash problem. Both public and private explorations should be provided for.

Both the industry and the Government have a big job cut out for them. There is need for both speed and cooperation. As a matter of fact, the same might be said of most of the problems I have discussed.

This thought I want to leave with you:

The fertilizer industry holds in its hands a great deal of responsibility for meeting the world food emergency and for helping American agriculture gain a better future. The world food emergency and the future of our agriculture are linked together in many ways. Both require an increased volume of commercial plant food materials. In the immediate situation, increased volume means quicker famine relief; and over the long pull, farmers have a right to be able to buy the plant food they need at prices in keeping with economic production and distribution. By these facts, and in other ways as well, our present and future are linked together. Fortunately, it is possible to make our emergency actions contribute directly toward the welfare of American agriculture.

But even if the opposite were true, we would be obliged to do everything possible to supply the fertilizer needed for emergency food production. The peace, security and freedom for which we have fought and sacrificed hang in the balance.

The fertilizer industry has come a long way in the last few years. Fertilizer is no longer, if it ever was, merely a potion to jack up the cash returns from farm crops. The fertilizer industry right now is in the business of saving lives—it is in the business of saving the soil—of raising the level of human nutrition and health. What the fertilizer industry does and what it does not do are both of profound interest to the entire public. I sincerely believe that you are equal to the task that lies before you.

Cable Address: CABESCAR

SCAR-LIPMAN & CO., Inc.

Domestic—Foreign

FERTILIZER MATERIALS—CHEMICALS

16 MELVILLE PLACE, IRVINGTON, N. J.

L.W. HUBER COMPANY
Brokers Fertilizer Materials
 Room 903—
 170 BROADWAY
 NEW YORK 7, NY

BUYERS' GUIDE • A CLASSIFIED INDEX TO ALL THE ADVERTISERS IN "THE AMERICAN FERTILIZER"

AMMONIA—Anhydrous and Liquor

DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.
Spencer Chemical Co., Kansas City, Mo.

AMMONIUM NITRATE

Spencer Chemical Co., Kansas City, Mo.

BAG MANUFACTURERS—Burlap

Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Mente & Co., Inc., New Orleans, La.
Virginia-Carolina Chemical Corp., Richmond, Va.

BAG MANUFACTURERS—Cotton

Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Mente & Co., Inc., New Orleans, La.
Virginia-Carolina Chemical Corp., Richmond, Va.

BAG MANUFACTURERS—Paper

Bagpak Inc., New York City
Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Chicago, Ill.
Fulton Bag & Cotton Mills, Atlanta, Ga.
Hammond Bag & Paper Co., Welisburg, W. Va.
Jaite Company, The, Jaite, Ohio
Raymond Bag Co., Middletown, Ohio.
St. Regis Paper Co., New York City.

BAGS—Dealers and Brokers

Ashcraft-Wilkinson Co., Atlanta, Ga.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.

BAG CLOSING MACHINES

St. Regis Paper Co., New York City.
Union Special Machine Co., Chicago, Ill.

BAG PRINTING MACHINES

Schmuts Mfg. Co., Louisville, Ky.

BAGGING MACHINES—For Filling Sacks

Exact Weight Scale Co., Columbus, Ohio
St. Regis Paper Co., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Utility Works, The, East Point, Ga.

BONE BLACK

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Huber & Company, New York City.

BONE PRODUCTS

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmalts, Jos. H., Chicago, Ill.

BORAX AND BORIC ACID

American Potash and Chem. Corp., New York City.

BROKERS

Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Keim, Samuel D., Philadelphia, Pa.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmalts, Jos. H., Chicago, Ill.

BUCKETS—For Hoists, Cranes, etc.

Hayward Company, The, New York City.

BUCKETS—Elevator

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CARS AND CARTS

Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

CHEMICALS

American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Virginia-Carolina Chemical Corp., Richmond, Va.

CHEMISTS AND ASSAYERS

Gascayne & Co., Baltimore, Md.
Shuey & Company, Inc., Savannah, Ga.
Stillwell & Gladding, New York City.
Wiley & Company, Baltimore, Md.

CONDITIONERS

American Cyanamid Co., New York City
American Limestone Co., Knoxville, Tenn.
Keim, Samuel D., Philadelphia, Pa.

COTTONSEED PRODUCTS

Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmalts, Jos. H., Chicago, Ill.

CYANAMID

American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Scar-Lipman & Co., Inc., Irvington, N. J.

DRYERS

Sackett & Sons Co., The A. J., Baltimore, Md.

ENGINEERS—Chemical and Industrial

Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

FERTILIZER (Mixed) MANUFACTURERS

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
International Minerals and Chemical Corporation, Chicago, Ill.
Virginia-Carolina Chemical Corp., Richmond, Va.

FISH SCRAP AND OIL

Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.

FOUNDERS AND MACHINISTS

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

A Classified Index to Advertisers in
"The American Fertilizer"

BUYERS' GUIDE

For an Alphabetical List of all the
Advertisers, see page 33

HOPPERS

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

IMPORTERS, EXPORTERS

Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Scar-Lipman & Co., Inc., Irvington, N. J.

INSECTICIDES

American Agricultural Chemical Co., New York City.

LIMESTONE

American Agricultural Chemical Co., New York City.
American Limestone Co., Knoxville, Tenn.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.

LOADERS—Car and Wagon

Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Acid Making and Handling

Chemical Construction Corp., New York City.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Ammoniating

Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Elevating and Conveying

Hough Co., The Frank G., Libertyville, Ill.
Hayward Company, The, New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Grinding and Pulverizing

Bradley Pulverizing Co., Allentown, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Material Handling

Hayward Company, The, New York City.
Hough Co., The Frank G., Libertyville, Ill.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Mixing, Screening and Bagging

Exact Weight Scale Co., Columbus, Ohio.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MACHINERY—Power Transmission

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Superphosphate Manufacturing

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

MANGANESE SULPHATE

McIver & Son, Alex. M., Charleston, S. C.
Tennessee Corporation, Atlanta, Ga.

MIXERS

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

NITRATE OF SODA

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.

NITRATE OF SODA—Continued

International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmalts, Jos. H., Chicago, Ill.

NITROGENOUS ORGANIC MATERIAL

American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.

NOZZLES—Spray

Monarch Mfg. Works, Philadelphia, Pa.

PHOSPHATE ROCK

American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Ruhm, H. D., Mount Pleasant, Tenn.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmalts, Jos. H., Chicago, Ill.
Virginia-Carolina Chemical Corp., Richmond, Va.

PLANT CONSTRUCTION—Fertilizer and Acid

Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

POTASH SALTS—Dealers and Brokers

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmalts, Jos. H., Chicago, Ill.

POTASH SALTS—Manufacturers

American Potash and Chem. Corp., New York City.
Potash Co. of America, New York City.
International Minerals & Chemical Corp., Chicago, Ill.
United States Potash Co., New York City.

PRINTING PRESSES—Bag

Schmutz Mfg. Co., Louisville, Ky.

PYRITES—Brokers

Ashcraft-Wilkinson Co., Atlanta, Ga.

REPAIR PARTS AND CASTINGS

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

ROUGH AMMONIATES

Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmalts, Jos. H., Chicago, Ill.

SCALES—including Automatic Bagging

Exact Weight Scale Co., Columbus, Ohio.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

BUYERS' GUIDE

SCREENS

Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.
Utility Works, The, East Point, Ga.

SEPARATORS—Air

Sackett & Sons Co., The A. J., Baltimore, Md.

SPRAYS—Acid Chambers

Monarch Mfg. Works, Inc., Philadelphia, Pa.

SULPHATE OF AMMONIA

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Hydrocarbon Products Co., New York City.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmaltz, Jos. H., Chicago, Ill.

SULPHUR

Ashcraft-Wilkinson Co., Atlanta, Ga.
Texas Gulf Sulphur Co., New York City.
Virginia-Carolina Chemical Corp., Richmond, Va.

SULPHURIC ACID

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.

SUPERPHOSPHATE

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmaltz, Jos. H., Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

SUPERPHOSPHATE—Concentrated

Armour Fertilizer Works, Atlanta, Ga.
International Minerals & Chemical Corporation, Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Virginia-Carolina Chemical Corp., Richmond, Va.

TANKAGE

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Scar-Lipman & Co., Inc., Irvington, N. J.
Schmaltz, Jos. H., Chicago, Ill.

UREA

DuPont de Nemours & Co., E. I., Wilmington, Del.

UREA-AMMONIA LIQUOR

DuPont de Nemours & Co., E. I., Wilmington, Del.

VALVES

Monarch Mfg. Works, Inc., Philadelphia, Pa.
Utility Works, The, East Point, Ga.

Alphabetical List of Advertisers

American Agricultural Chemical Co., New York City.....	3
American Cyanamid Co., New York City.....	—
American Limestone Co., Knoxville, Tenn.....	24
American Potash and Chemical Corp., New York City.....	20, 29
Armour Fertilizer Works, Atlanta, Ga.....	—
Ashcraft-Wilkinson Co., Atlanta, Ga.....	Front Cover
Bagpak Inc., New York City.....	—
Baker & Bros., H. J., New York City.....	—
Bemis Bro. Bag Co., St. Louis, Mo.....	21
Bradley Pulverizer Co., Allentown, Pa.....	—
Bradley & Baker, New York City.....	14
Chase Bag Co., Chicago, Ill.....	—
Chemical Construction Corp., New York City.....	26
Du Pont de Nemours & Co., E. I., Wilmington, Del.....	—
Exact Weight Scale Co., Columbus, Ohio.....	25
Fulton Bag & Cotton Mills, Atlanta, Ga.....	6
Gascoyne & Co., Inc., Baltimore, Md.....	34
Hammond Bag & Paper Co., Wellsburg, W. Va.....	22
Hayward Company, The, New York City.....	34
Hough Co., The Frank G., Libertyville, Ill.....	—
Huber Co., L. W., New York City.....	30
Hydrocarbon Products Co., New York City.....	17
International Minerals & Chemical Corporation, Chicago, Ill.....	Back Cover
Jaite Company, The, Jaite, Ohio.....	2nd Cover
Keim, Samuel D., Philadelphia, Pa.....	33
McIver & Son, Alex. M., Charleston, S. C.....	29
Mente & Co., Inc., New Orleans, La.....	4
Monarch Mfg. Works, Inc., Philadelphia, Pa.....	34
McLaughlin Gormley King Co., Minneapolis, Minn.....	—
Potash Co. of America, New York City.....	3rd Cover
Raymond Bag Co., Middletown, Ohio.....	16
Ruhm, H. D., Columbia, Tenn.....	34
Sackett & Sons Co., The A. J., Baltimore, Md.....	—
Scar-Lipman & Co., Inc., Irvington, N. J.....	30
Schmaltz, Jos. H., Chicago, Ill.....	34
Schmutz Mfg. Co., Louisville, Ky.....	5
Shuey & Company, Inc., Savannah, Ga.....	34
Spencer Chemical Co., Kansas City, Mo.....	23
Stedman's Foundry and Machine Works, Aurora, Ind.....	28
Stillwell & Gladding, New York City.....	—
St. Regis Paper Co., New York City.....	18, 19
Tennessee Corporation, Atlanta Ga.....	34
Texas Gulf Sulphur Co., New York City.....	—
Union Special Machine Co., Chicago, Ill.....	—
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.....	29
United States Potash Co., New York City.....	27
Utility Works, The, East Point, Ga.....	—
Virginia-Carolina Chemical Corp., Richmond, Va.....	—
Wiley & Company, Inc., Baltimore, Md.....	34

FEEDING AND FERTILIZER MATERIALS

(SINCE 1898)

SAMUEL D. KEIM
1343 ARCH STREET
PHILADELPHIA 7, PA.

MONARCH SPRAYS



This is our Fig. 645 Nozzle. Used for Scrubbing Acid Phosphate Gases. Made for "full" or "hollow" cone in Brass and "Everdur." We also make "Non-Clog" Nozzles in Brass and Steel, and Stoneware Chamber Sprays now used by nearly all chamber spray sulphuric acid plants.

CATALOG 6-C

MONARCH MFG. WORKS, INC.
Westmoreland and Emory Sts., Philadelphia, Pa.

HAYWARD BUCKETS



Use this Hayward Class "K" Clam Shell for severe superphosphate digging and handling.

THE HAYWARD CO., 202 Fulton St., New York

GASCOYNE & CO., INC.

Established 1887

Chemists and Assayers

Public Weighers and Samplers

27 South Gay Street - BALTIMORE, MD.

SHUEY & COMPANY, Inc.

Specialty: Analysis of Fertilizer Materials and Phosphate Rock. Official Chemists for Florida Hard Rock Phosphate Export Association. Official Weigher and Sampler for the National Cottonseed Products Association at Savannah; also Official Chemists for National Cottonseed Products Association

115 E. BAYSTREET, SAVANNAH, GA.

H. D. RUHM

Phosphate Consultant

305 W. 7th Street

COLUMBIA

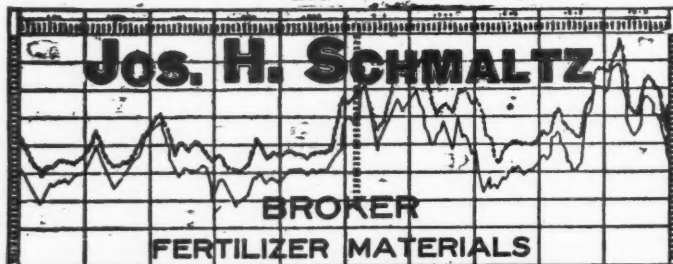
TENNESSEE

WILEY & COMPANY, Inc.

Analytical and Consulting Chemists

BALTIMORE 2, MD.

Tankage
Blood
Bone
All
Ammoniates



327
South
La Salle
Street
CHICAGO

OFFICIAL BROKER FOR MILORGANITE

Manganese Sulphate Available Now!

Fertilizer grade 65%

Hi-Grade 75%-80%

Write us today!

Tennessee Corporation - Dept. B - Atlanta, Ga.



PCA'S RED INDIAN LOOKS AHEAD...

Soil scientists and practical farmers agree that the wisdom of high potash application is unquestioned. It is a thoroughly established fact that *Potash Pays*.

Potash is one of the large lacks in American soil. PCA, now in its second decade of service, faces the coming era of heavy fertilization, determined to make utmost effort to produce and supply high grade Red Muriate of Potash to meet the needs of the fertilizer industry . . . to continue to merit the confidence and reliance which the industry has displayed toward this company and its products.



POTASH COMPANY of AMERICA

CARLSBAD, NEW MEXICO

GENERAL SALES OFFICE...50 Broadway, New York, N. Y. • MIDWESTERN SALES OFFICE...612 Lehmann Bldg., Peoria, Ill.
SOUTHERN SALES OFFICE...Mortgage Guarantee Building, Atlanta, Ga.



*Yes, Sir, it sure
is Easy to Handle*

Sul-Po-Mag

WATER-SOLUBLE
SULPHATE OF POTASH-MAGNESIA



It's no wonder the men
in your plant like to work
with Sul-Po-Mag. The
free-flowing qualities of
its clean, dry crystals
make it easy to handle
with the result that you

save time and money in mixing fertilizers. Sul-Po-Mag is the practical and economical way to get water-soluble magnesia for your fertilizer mixtures or for direct application. Even though it is being produced in larger quantities than ever before, it is still not yet always possible to keep pace with the rapidly growing demand. Nature fortunately combined quick-acting, water-soluble magnesia and potash in one sulphate plant food. It is produced exclusively by International as Sul-Po-Mag to meet the needs of a wide variety of crops.

SUL-PO-MAG (WATER-SOLUBLE
SULPHATE OF POTASH-MAGNESIA)

**MURIATE OF POTASH
SULPHATE OF POTASH**



International



MINERALS & CHEMICAL CORPORATION

General Offices: 20 NORTH WACKER DRIVE • CHICAGO 6

DISTRICT SALES OFFICES: 61 BROADWAY, NEW YORK, N. Y. • CHICAGO • VOLUNTEER BLDG., ATLANTA, GA.

ION

A, GA